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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/714,871	11/17/2000	Richard Hellberg	2466-76	4896

7590

07/14/2004

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EXAMINER

ZHENG, EVA Y

ART UNIT PAPER NUMBER

2634

DATE MAILED: 07/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/714,871

Applicant(s)

HELLBERG ET AL.

Examiner

Eva Yi Zheng

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14-18 is/are allowed.
- 6) ☒ Claim(s) 1,2,4,7-10,12 and 13 is/are rejected.
- 7) ☒ Claim(s) 3,5,6,11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. The objection to the Abstract is withdrawn.
2. The rejection to claim 9 under 35 U.S.C. § 112 is withdrawn.
3. Applicant's arguments filed on April 21, 2004 have been fully considered but they are not persuasive. Examiner has thoroughly reviewed Applicant's arguments but firmly believes that the cited reference reasonably and properly meet the claimed limitation as rejected.

Regarding claims 1, 2, 4, 7-10, 12, and 13:

Applicant's argument – "Hellberg fails to disclose in method of claim 1 generating for each of the discrete signals values a corresponding alternating current (AC) carrier signal."

Examiner's response – Hellberg disclose digital signals output from a signal-delta modulator (as shown in Fig. 4) corresponding with an analogue sinus signal, which is inherent as AC carrier (Col 11, L14-16; as shown in Fig. 3). In addition, it is well known that an RF signal (output of 421 in Fig. 4) must comprise a carrier signal. Therefore, Hellberg meet all claimed limitations.

4. Applicant's arguments, see page 15-16, filed on April 21, 2004, with respect to claims 14-17 have been fully considered and are persuasive. The claim reject of 35 U.S.C. §102 (b) has been withdrawn.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

6. Claims 1,2, 4, 7-10, 12, and 13 are rejected under 35 U.S.C. 102(a) as being anticipated by Hellberg et al. (WO 98/11683).

a) Regarding claim 1, Hellberg et al. disclose a method of generating on an output line a high-power modulated radio frequency signal S_{out} from a low or medium frequency information signal S_{in} , the method comprising the steps of: (as shown in Fig. 4)

-pulse-shaping the information signal (X_{IF}) using sampling having a sampling frequency to form a digital signal S_D having at least two discrete signal values; (Page 12, L3-5)

- generating for each of the discrete signal values a carrier; (sequence B; Page 12, L15-18)

- amplifying and mixing the information signal (block 420) to produce a switched radio frequency signal carrying the information signal (Page 12, L 3-21); and

-filtering (block 430) the switched radio frequency signal for obtaining the high-power modulated radio frequency signal (Page 12, L23-24);

wherein, in the step of generating, the carriers are generated as alternating radio frequency voltages, and in the step of amplifying and mixing, amplifying is performed by

connecting, controlled by the discrete signal values of the digital signal, the carrier associated with the respective discrete signal value to the output line. (Page 12, L3 – Page 12, L2)

b) Regarding claim 2, Hellberg et al. disclose in the step of generating, the carriers are generated to have frequencies being multiples of the sampling frequency of digital signal. (Page 12, L 17-18)

c) Regarding claim 4, Hellberg et al. disclose in the step of filtering, a band-pass filtering is made rejecting distortion and/or an unwanted side band produced by the controlled connecting of the carriers in the step of mixing and amplifying. (Page 12, L25-26)

d) Regarding claim 7, Hellberg et al. disclose in the step of generating, the carriers are generated to stay close to zero for a time period at or around the times at which the connecting of any of the carriers is started or ended. (Page 10, L20-22)

e) Regarding claim 8, Hellberg et al. disclose (as shown in Fig. 14) the information signal is quadrature shifted in two components so that, in the step of pulse-shaping, two digital signals are formed (YI, and YQ), each having at least two discrete signal values, and that in the step of generating, carriers are generated for each of the signal values of the two digital signals, the carriers generated for the signal values of one of the digital signals having a 90 degrees phase-difference in relation to the carriers generated for the signal values of another of the two digital signals. (14030, and 14040)

f) Regarding claim 9, Hellberg et al. disclose the side-bands are used as two linearly independent channels as in the quadrature phase I and Q arrangement. (Fig.14)

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- g) Regarding claim 10, Hellberg et al. disclose when one band-pass filter is used (block 1430), the signals formed in the step of mixing and amplifying (block 420) are added before the filter.
- h) Regarding claim 12, Hellberg et al. disclose the filter(s) is/are (a) band-pass filter(s) rejecting distortion achieved by the amplification. (block 430, filter is followed by block 420, the mixing and amplifying unit)
- i) Regarding claim 13, Hellberg et al. disclose in the step of pulse-shaping, a digital signal having only two signal values is formed. (Page 10, L7-10)

Allowable Subject Matter

7. Claims 3, 5, 6, and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. Claims 14-18 are allowed.

9. The following is an examiner's statement of reasons for allowance:

Claim rejections to 14-17 are withdrawn. New claim 18 is allowed since it is dependent upon the independent claim 14.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eva Yi Zheng whose telephone number is 703-305-8699. The examiner can normally be reached on 7:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone number for the organization where this application or proceeding is assigned is 703-879-9306.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

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Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Eva Yi Zheng
Examiner
Art Unit 2634

July 1, 2004



SHUWANG LIU
PRIMARY EXAMINER